ENERGY SOLUTIONS

Case Study: The Regency Apartment Homes Manassas, VA

CHP Energy Solutions, Program Administrator
Washington Gas Low-Income Energy Audit & Weatherization Program
Dominion Energy Virginia Income & Age Qualifying Home Improvement Program

$353,931	**$42,034**	**365,511**
Total value of upgrades	Estimated Annual Savings for Residents	Annual kWhe Savings

"We appreciate this opportunity to partner with Community Housing Partners to do upgrades in the community that benefit our residents in the long run."

-Samanth Giffin, Property Manager
The Regency Apartment Homes

The Property

The Regency Apartment Homes, owned and managed by the Franklin Johnston Group, is a 30- building, 248-unit affordable housing community built in 2003. Located in Prince William County in northern Virginia near the independent city of Manassas, the complex features two and three-bedroom apartment homes within proximity to schools, shopping, and entertainment. As a participant in the federal Low-Income Housing Tax Credit Housing Choice Vouchers programs, the Regency Apartment Homes qualifies for low-income utility programs. The apartment homes feature natural gas space and water heating throughout the property.

Combining Funding Sources - Washington Gas & Light and Dominion Energy Virginia

Washington Gas, a WGL Holdings Inc. company, is a natural gas utility providing service to more than 1.2 million customers in the District of Columbia, Maryland and Virginia. Their Low-Income Energy Audit & Weatherization Program, as implemented by CHP Energy Solutions, reduces energy costs for 450 residential customers each year through efficiency upgrades, including those installed at the Regency Apartment Homes. For this project, CHP also partnered with Dominion Energy to add LED bulb replacement for the units through their Virginia Income and Age Qualifying Home Improvement Program. These multiple partnerships and layering of funds significantly lowered energy burdens for residents. As the program administrator, CHP Energy Solutions also hired and managed the subcontractors, both of whom have long standing relationships with CHP and are highly experienced energy efficiency companies. Sustainable Building Elements out of Ashland, VA handled the upgrades, while Fifth Fuel of Manassas installed the insulation.

The Process

As part of the weatherization process, each building is audited before work begins to assess current conditions, providing a comprehensive evaluation and analysis of a building's current energy use. Results from the energy audit provide insight for the building owner and identify the most economical and energy-saving opportunities, while also revealing health and safety concerns. The whole-building analysis and installation and resulting retrofit result in overall improvement in the building performance, as well as improved indoor air quality, durability, and thermal comfort.

Scope of Work

At the Regency Apartment Homes, each unit has a forced-air natural gas furnace, all of which were tested for combustion safety and found to be in proper working order. Water is also heated by natural gas and all exposed and accessible hot water pipes were insulated.

Five to eight incandescent lightbulbs per apartment were replaced with EnergyStar®-rated LEDs that are designed to last 13 years or more, providing the same quality of light while using 85% less energy. Low-flow kitchen and bath faucet aerators and low-flow showerheads were installed. The modern designs of these items are highly effective and perform as well as the pieces they replaced, while using less water and less energy to heat the water.

Eleven inches of loose-fill blown fiberglass insulation was added over the existing three to four inches, bringing the final insulation levels from R-13 up to R-49. Before insulating, the attics were prepared with eave baffles to ensure proper ventilation, and the bathroom vent lines were repaired. Electrical junction boxes in the attic were covered and marked prior to insulation, and attic insulation rulers were installed. Retaining dams were installed at each dwelling attic access to keep the loose-fill insulation in its intended location and depth, and to prevent it entering living spaces when attics are accessed for maintenance.

Installed Upgrades

Building Envelope
Spot Air Sealing
Attic Insulation

Health & Safety
Combustion Appliance Zone Testing
Combustion Analysis Testing

Baseload
LED Lightbulbs
Hot Water Pipe Insulation
Low-Flow Showerheads
Low-Flow Faucet Aerators